



Vert-X 21 - 5V / SPI

Applications

- Joysticks / Master switches
- Valve controls
- Inclinometer

Features

- Compatible to the potentiometers of the PL300-family
- Compact dimensions
- Contactless measuring method
- Long life
- High accuracy of measurement
- Use in cramped installation conditions
- Full resolution and accuracy at programmed electrical angle
- Full redundancy feasible

Sensor principle		MH-C	MH-C2
Electrical data			
Measuring range	°	0 ... 360	-
Indep. linearity	% of meas. range	±0.3	-
Max. hysteresis	°	0.1	-
Resolution	bit	14	-
Max. repeatability	°	0.1	-
System propagation delay fast mode	kHz	2.2	-
System propagation delay slow mode	kHz	(0.55)	-
System propagation delay fast mode	µs	400	-
System propagation delay slow mode	µs	(600)	-
Max. temperature coefficient of the output signal	ppm/°K	25	-
MTTFd / MTBF	years	668 / 668	-
Power supply voltage	VDC	5 (±10%)	-
Current consumption without load (typ.) fast mode	mA	14	-
Current consumption without load (typ.) slow mode	mA	(9)	-
Min. ohmic load at output	kOhm	-	-
Max. capacitive load at output	nF	-	-
Reverse polarity protection of power supply		yes	-
Electrical connection		Wires	-
Cross section of single wires	mm ²	0.25 (AWG24)	-
Redundancy feasible		no	-
Mechanical data			
Mechanical range	°	360 (continuous)	-
Protection class		IP54 / IP65	-
Max. starting torque at specified protection class	Ncm	0.5 / 3	-
Max. rotating speed	1/min.	6000	-
Min. life	movements	360 Mio.	-
Max. permitted axial shaft load	N	5	-
Max. permitted radial shaft load	N	5	-
Operating & storage temperature	°C	-40 ... +125	-
IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5 ... 2000 Hz)	g	20	-
IEC 68-2-27 Shock	g	50	-
Standards			
EN 55022 classe B, Emission radiated (30... 230 MHz)	dB(µV/m)	max. 30	-
EN 55022 classe B, Emission radiated (230...1000MHz)	dB(µV/m)	max. 37	-
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	±4 / ±8	-
EN 61000-4-3, Immision HF radiated (80... 1000 MHz)	V/m	30	-
EN 61000-4-4, Burst (on all lines)	kV	±1	-
EN 61000-4-5, Surge (lines to ground)	kV	±1	-
EN 61000-4-6, Immision HF conducted (0.15...80MHz)	Vemk	10	-
EN 61000-4-8, Immision magnetic field (50Hz)	A/m	300	-
IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20	-
IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1	-

Errors and omissions excepted. Subject to change without notice. State: 30.03.15

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CONTELEC
 A company of the Siedle-Group



Vert-X 21 - 5V / SPI
Ordering code

Vert-X													
2	1	1	2	a	7	3	6	2	8	1	3	0	2
				Output characteristics						Electrical connection			
				Positive gradient CW Standard 1						3 Standard Wires 5pole / 6pole			
				Positive gradient CCW Optional 2						9 Optional Special wires			
				Redundant, positive gradient CW Optional 3									
				Redundant, positive gradient CCW Optional 4									
				Redundant, crossed signal curves Optional 5									
				Output signal						Length of wires			
				SPI Standard 8						01 Optional 10cm			
										02 Standard 20cm			
										03 Optional 30cm			
										04 Optional 40cm			
										05 Optional 50cm			
										99 Optional Special length			
				Power supply voltage									
				5VDC Standard 2									
				Electrical angle									
				36 Standard Electrical angle 360°									
				xx Optional 10 to 35; Declaration in 10° steps									
				99 Optional Special angle									
				Sensor principle									
				7 MH-C									
				Protection class									
				a Standard IP54									
				b Optional IP65									
				Shaft									
				0 Standard 6mm shaft slotted / nominal length 14.1mm									
				1 Standard 6mm shaft D-shape / nominal length 14.1mm									
				2 Standard 3.175mm shaft slotted / nominal length 11.15mm									
				9 Optional Special shaft									
				Housing									
				211 Standard: Servo mount size 9									
				212 Standard: Bushing M9 x 0.75 with pilot diameter									
				219 Optional: Special housing									

	MH-C	MH-C2
Custom shaft design	X	-
Custom modification of the housing	X	-
Custom wires	X	-
Sample rate in slow mode	X	-
Switch functions TTL (max. 2)	-	-
Special characteristic curve	-	-
Special electrical angle within 30° to 360° (ex factory)	X	-
Electrical angle programmable (Software)	-	-
Start & end point settable (Additional wires)	-	-
Sense of rotation CW/CCW settable / programmable (Additional wires or Software)	-	-
Index point settable / programmable (Additional wires or Software)	-	-

Options (on request)

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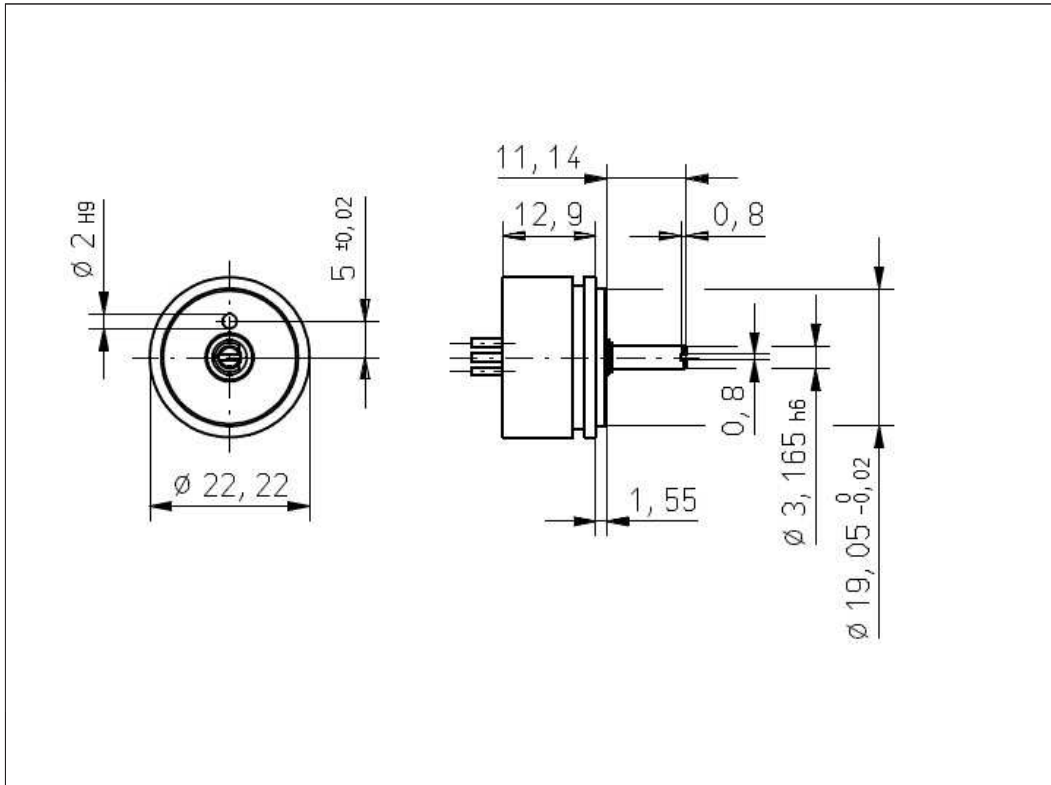
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Vert-X 2112

Accessories (incl.)

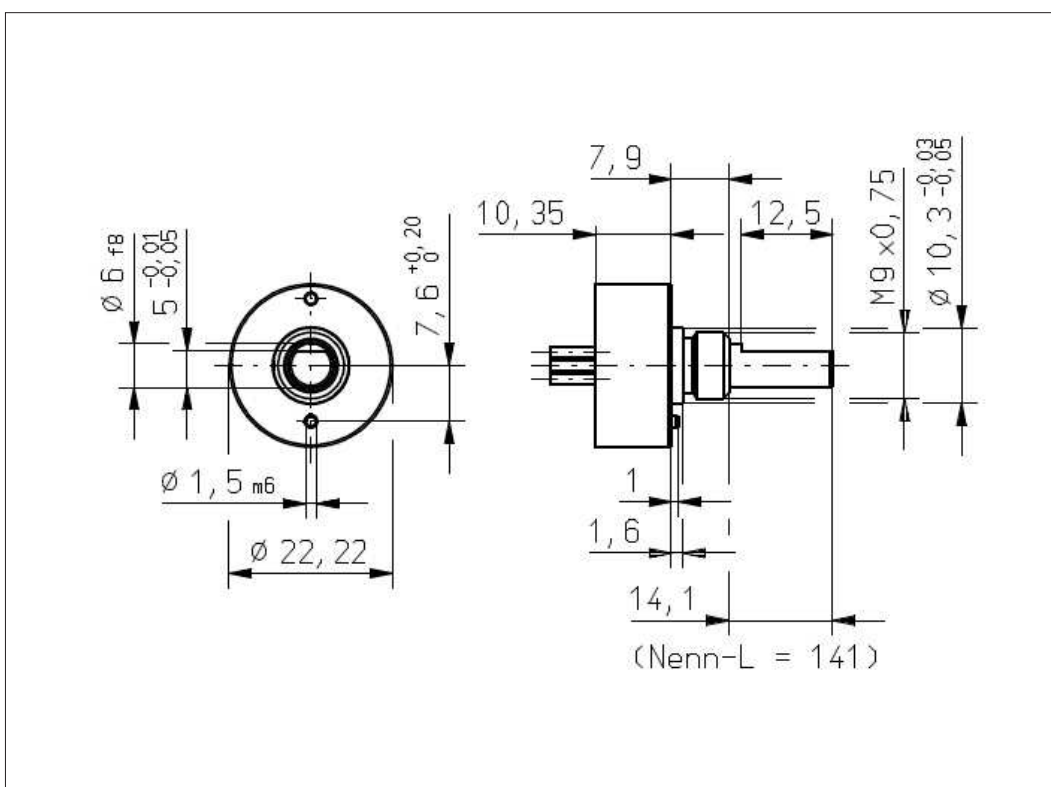
- 1x Fixation clip
- 2x Slotted cylinder head screw M3x8



Vert-X 2121

Accessories (incl.)

- 1x Nut M9x0.75 / SW13
- 1x Serrated lock washer



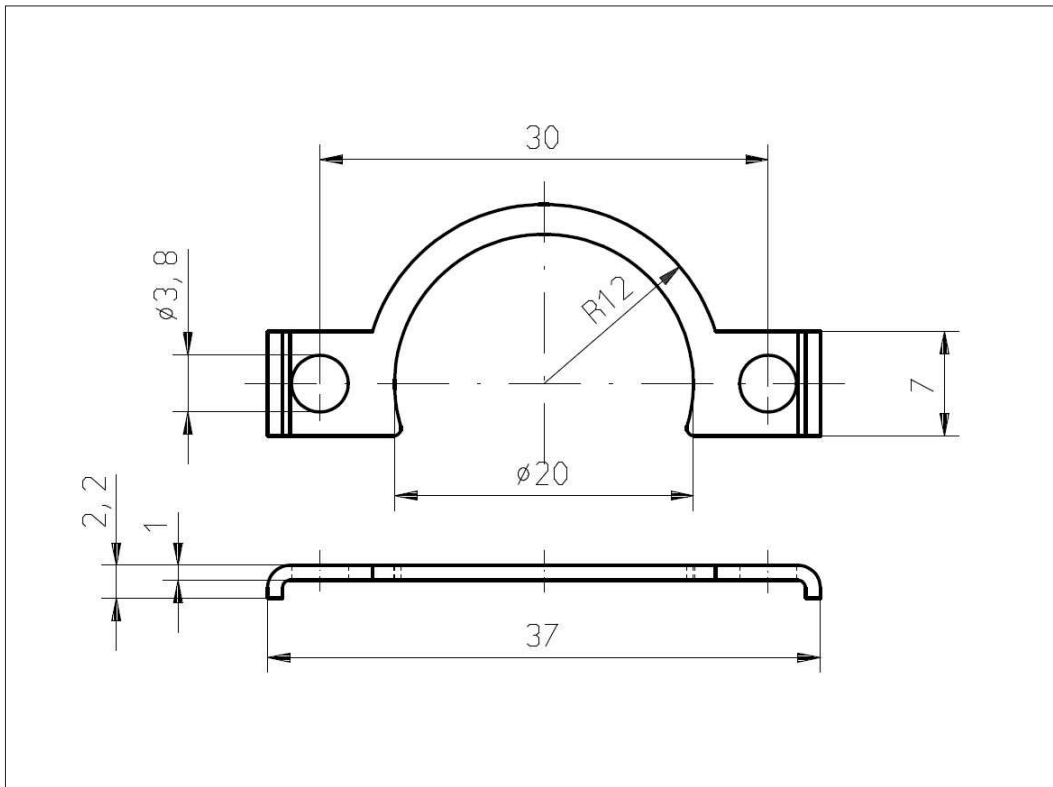
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Vert-X 2112
Accessories
Fixation clip



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